FACT SHEET FOR NPDES PERMIT NO. WA0040932
CLARK COUNTY POWER GENERATING PLANT

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) permits which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 RCW which defines the Department's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits (Chapter 173-220 WAC), and water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

This fact sheet has been reviewed by the permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments (Appendix F) will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix F--Response to Comments.

GENERAL INFORMATION

Applicant:	Clark Public Utilities	
Facility Name and Address:	River Road Generating Project NW Lower River Road Vancouver, Washington 98668	
Type of Facility:	Electric Power Generation	
SIC Code:	4911	
Discharge Location:	Waterbody names: **Columbia River** Outfall 001, Latitude: 45° 38' 45" N **Vancouver Lake Park** Outfall 002, Latitude: 45° 36' 51" N **Shillapoo Lake** Outfall 003, Latitude: 45° 38' 31" N **Frenchman's Bar Park** Outfall 004, Latitude: 45°38' 31" N	 Longitude: 122° 43' 45" W Longitude: 122° 46' 19" W Longitude: 122° 45' 38" W Longitude: 122°45' 45" W
Water Body ID Number:	WA-CR-1010	

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY OF THE FACILITY

Clark Public Utilities (CPU) has a 248-megawatt gas-fired combustion turbine combined cycle (CTCC) power facility in West Vancouver, along the Columbia River. The project is known as the River Road Generating Project (RRGP). The plant has a natural gas-fired combustion turbine and heat recovery steam generator that uses hot exhaust gases from the combustion turbine to generate steam at high, intermediate, and low pressure levels. The RRGP plant is owned by CPU, but is operated by General Contractual Services

INDUSTRIAL PROCESS AND WASTEWATER TREATMENT

The process is a combined-cycle, meaning the turbine burns natural gas to turn a generator to produce electricity. Waste heat from gas combustion will be used to produce steam that will drive a steam turbine on the same shaft as the gas turbine. This site operates continuously 24 hours per day, 365 days per year. Wet processes to support power generation include:

Operating a boiler for steam generation.

Operating facility condensers for condensing the residual steam from the turbine.

Maintaining cooling towers to cool facility condensers used in steam condensing.

Operating an ion exchange demineralizer system to provide high-quality water. This high-quality water is used as boiler makeup and as scrubber water for the turbine air pollution control systems.

Providing seal water to process pumps.

The various wastewater streams are considered to belong to two distinct categories for the purposes of controlling and regulating pollutants. Wastewater from the cooling towers (called blowdown) is regulated as a separate category and all of the other above mentioned wastewater sources are regulated as a combined category called low volume wastewater. (Metal cleaning wastes are another wastewater category identified as a separate waste stream, but the facility will be hauling metal cleaning wastewater off-site for treatment and disposal.)

Wastewater from the cooling towers will be combined in a discharge sump (or tank) with the low volume wastewater just prior to being pumped into the outfall pipe and discharged either to the Columbia River, a wetlands enhancement project or to ground discharge in nearby public areas.. Final pH adjustments will be accomplished using pH monitors and a control system employing feedback loops to ensure a final pH between 6.0-9.0. The discharge flowrates are estimated to average 386,000 gallons per day, with peak flows of 537,000 gallons per day.

Sanitary wastewater will be collected in an isolated system and discharged directly to the city sanitary sewer system through a separate meter.

GROUND WATER

The ground disposal sites are on the flood plain of the Columbia River.

DISCHARGE OUTFALLS

Outfall Point 001

Outfall 001 consists of an underground pipe approximately 2,500 feet long and 12 inches in diameter that discharges the combined and treated cooling tower blowdown and low volume wastewater from the RRGP power plant into the Columbia River. The outfall extends approximately 200-feet from the shoreline at a depth of approximately -45 feet (Army Corps of Engineers Datum). The outfall is located at River Mile 103.2.

The internal waste stream of cooling tower blowdown water will be monitored at a point in the cooling tower effluent pipe, prior to mixing with low volume wastewater streams. The cooling tower blowdown is combined with the low volume wastes in a discharge sump for subsequent pH adjustment and final discharge to the environment at Outfall 001.

Low volume wastewater will be monitored at a point in the effluent pipe that conveys the low volume waste streams, prior to mixing with the cooling tower effluent. The low volume waste flows to the combined discharge sump for subsequent pH adjustment and final discharge to the environment at Point 001.

Outfall 002, Vancouver Lake Park

Outfall 002 will be an irrigation water discharge to an area of Vancouver Lake Park; a park owned by Clark County. This will be a discharge to ground falling under state regulations.

Outfall 003, Shillapoo Lake

Outfall 003 will be a wetlands enhancement project on the south shore of Shillapoo Lake; a seasonal body of water. This is a surface water discharge to waters of the state regulated as an NPDES permit.

Outfall 004, Frenchman's Bar Park

Outfall 004 will be an irrigation water discharge to an area of Frenchman's Bar Park; a park owned by Clark County. This will be a discharge to ground falling under state regulations.

PERMIT STATUS

This is a previously permitted facility.

An application for a permit was submitted to the Department on July 18, 2000, and accepted by the Department on July 2, 2001.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on July 22, 2002.

The permit requires that the cooling tower blowdown be limited to zero discharge of all "Priority Pollutants except copper and zinc. Zero discharge in this case is based on a stated minimum detection limit. During 1998 the permittee violated this limit set forth for discharges from the cooling tower (blowdown) according to the following tables:

PRIORITY POLLUTANT SCAN VIOLATIONS, 1998:

Constituent	Reporting Limit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Arsenic, µg/L	1.0	1.02	9.0	-	9.9
Copper, µg/L	2.0	-	6.8	17.5	3.8
Lead, µg/L	1.0	-	1.0	-	-
Nickel, µg/L	2.0	2.6	8.1	-	7.1
Selenium, µg/L	1.0	1.4	-	-	-
Phenolics, mg/L	0.1	-	-	-	0.138

PRIORITY POLLUTANT SCAN VIOLATIONS, 1999:

Constituent	Reporting Limit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Arsenic, mg/L	1.0	9.4	1.02		
Copper, µg/L	2.0	5.2	3.4		
Mercury, µg/L	0.2	0.237	-		
Nickel, µg/L	2.0	2.9	2.2		
Selenium, µg/L	1.0	2.4	1.5		

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge from the combine wastewater sump has been characterized for the following regulated parameters:

Table 1: Wastewater Characterization

Parameter	Maximum Value	30 Day Average Value	Long Term Average Value
BOD_5 , mg/L	ND	ND	ND
COD, mg/L	8.46	8.46	8.46
TOC, mg/L	ND	ND	ND
TSS, mg/L	ND	ND	ND
Ammonia, mg/L	ND	ND	ND
Temperature, winter, ° C	24	24	22.7
Temperature, summer, °C	26	26	24.1
PH, S.U.	6 TO9	6 TO 9	N/A
Chlorine, residual, µg/L	60	39	11
Chromium, µg/L	6.8	N/A	3.9
Copper, µg/L	17.5	N/A	8.3
Zinc, µg/L	24.6	N/A	17.4
PCBs, mg/L	Not Detected	Not Detected	Not Detected
Oil and Grease, mg/L	Not Detected	Not Detected	Not Detected
Priority Pollutants	See Appendix C		

Table 1 lists concentrations or values for pollutants that might reasonably be expected in the wastewater discharge to the Columbia River. The values were taken from the NPDES permit application and compliance testing.

Several chemicals can reasonably be expected in the final effluent because they are proposed to be added to the boiler and cooling tower makeup water to condition the water. The makeup water must be conditioned to retard the formation of mineral deposits and control biological growth. These chemicals are: Acrylate Copolymer, Tolyltriazole (TTA), Hydroquinone/Benzoquinone, Morpholine, Cyclohexylamine, and Diethylaminoethanol. None of these chemicals appear on any list of regulated toxic chemicals. They are almost altogether consumed in the process

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific wastewater. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC) or Sediment Quality Standards (Chapter 173-204 WAC). The more

stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

The River Road Generating Project (RRGP) is a steam electric power facility. Generation of electricity by a process using fossil fuels in conjunction with a steam water system is a categorical activity meeting the applicability criteria of 40 CFR § 423.10. The RRGP is therefore considered to be a Categorical Industry subject to the requirements of 40 CFR Part 423 - Steam Electric Power Generating Point Source Category

The new power plant will generate wastewater that must meet technology-based effluent limitations. The wastewater is subject to specific federal effluent limitations. All technology based limitations for the CPU power plant facility are derived from the applicable sections of 40 CFR § 423.15 New Source Performance Standards (NSPS), since the facility is new, not existing. Several of the federal effluent limitations are based on the amount of wastewater from a particular process. The technology-based limitations that are flow-based are calculated by multiplying the federal limitation by the applicable wastewater flow rate. The following tables and text present the applicable federal effluent limitations and the resulting effluent limitations for each of the wastewater streams. The proposed switch from chlorination to bromination makes the federal regulations no longer completely applicable. This permit proposes to substitute total combined halogens for free available chlorine in the limits derived from new source performance standards.

The Department has determined that the River Road Generating Plant is subject to the following sections of the new source performance standards. Only those sections of 40 CFR § 423.15 that are applicable are listed below:

40 CFR § 423.15 New source performance standards (NSPS)

(a) The pH of all discharges, except once through cooling water, shall be within the range of 6.0 - 9.0.

(b) There shall be no discharge of polychlorinated biphenyl compounds (PCB's) such as those commonly used for transformer fluid.

(c) The quality of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

Table 2: § 423.15(c) Effluent Limitations for Low Volume Waste Sources.

Pollutant	*Daily Maximum (mg/L)*	*Monthly Average (mg/L)*
TSS	*100.0*	*30.0*
Oil and Grease, Total	*20.0*	*15.0*

.(j)(1) The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown times the concentration listed below:

Table 3: § 423.15(j) Effluent Limitations for Cooling Tower Blowdown.

Pollutant	*Maximum (mg/L)*	*Average (mg/L)*
Free Available Chlorine	*0.5*	*0.2*

Pollutant	*Daily Maximum (mg/L)*	*Monthly Average (mg/L)*
The 126 priority pollutants (see APPENDIX D--126 priority pollutants), except:	*No detectable amount*	*No detectable amount*
Chromium, total	*0.2*	*0.2*
Zinc, total	*1.0*	*1.0*

(j)(2) Not applicable.

(j)(3) At the permitting authority's discretion, instead of the monitoring in 40 CFR part 122.11(b), compliance with the limitations for the 126 priority pollutants in paragraph (j)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136. A complete listing of the 126 priority pollutants has been reprinted from the 40 CFRs and is contained in APPENDIX D--126 priority pollutants.

(m) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section.

(n) In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source shall not exceed the specified limitations for that waste source.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL). No TMDL has been conducted on this stretch of the Columbia River.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permit shall be conditioned in such a manner as to authorize only activities that will cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground

water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria are taken from and defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge.

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington state (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the state Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a degradation of existing water quality or beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be

authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Columbia River that is designated as a Class A receiving water in the vicinity of the outfall. Other nearby point source outfalls include Great Western Malting, Northwest Packing, and Vancouver Ice and Fuel (Albina Fuels). Significant nearby non-point sources of pollutants include stormwater from the City of Vancouver. Characteristic uses include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

A special condition for the Columbia River in the vicinity of the outfall is that the receiving water temperature shall not exceed 20°C due to human activities. This is above the Class A standard of 18°C. When natural conditions exceed 20.0°C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time, exceed 0.3°C due to any single source.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Table 4: Surface Water Quality Criteria

Parameter	**Criteria**
Fecal Coliforms	100 colonies/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	Shall not exceed 20.0°C due to human activities.
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Flow has been eliminated since water is not toxic.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

Pollutant concentrations in the proposed discharge from Discharge Point 001 exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and is defined as follows:

The acute mixing zone will be to a maximum of 10.5 meters downstream of the diffuser. The chronic mixing zone will be a maximum of 105 meters downstream and 30 meters upstream of the diffuser.

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of a computer mixing modeling program called Cormix version 4.1GT. This mixing zone analysis was run for 4 situations:

1. Normal operation, average water use, with all cooling tower effluent going to the Columbia.

2. Normal Operation, average water use, with all cooling tower water going to reuse.

3. Maximum operation, maximum water use, with all cooling tower water going to the Columbia.

4. Maximum operation, maximum water use, with all cooling tower water use going to reuse.

DILUTION MODELING

Modeling Situation	Acute Dilution, 10.5 meters DS	Chronic Dilution, 105 meters DS
Normal operation, no reuse	8	190
Normal operation, with reuse	8	3853
Maximum operation, no reuse	8	242
Maximum operation, with reuse	8	432

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical condition for the Columbia River is the seven day average low river flow with a recurrence interval of ten years (7Q10). The ambient background data used for this permit includes the following from the existing permit.

Table 5: Ambient Data at Critical Conditions.

Parameter	Value used
7Q10 low flow	2,400 m^3 /s
Velocity	0.125 m/s
Depth	13.3 m
Width	732 m
Temperature	20°C
pH (high)	7.35
Total Ammonia-N	0.10 mg/L
Hardness	62 mg/L as CaCO3
Copper	2.0 µg/L
Zinc	2.0 µg/L
All Other Metals	0.0 (below detection limits)

The impacts of temperature, pH, chlorine, ammonia, metals, and other toxics were determined as shown below, using the dilution factors at critical conditions described above.

BOD--This discharge results in a very small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. No treatment to remove BOD will be necessary to protect the dissolved oxygen criteria in the receiving water.

Temperature and pH--The impact of pH and temperature were modeled using the calculations from EPA, 1988. Given the four modeling situations with resultant dilutions and the background shown above, the results are as follows:

Situation	Effluent pH	Effluent Temperature	Effluent Alkalinity	Mixing Zone pH	Mixing Zone Temperature
Normal operations No reuse	7.8	40	345	7.36	20.1
Normal Operations w/reuse	8.5	40	94	7.35	20
Maximum Operation, no reuse	8.0	40	335	7.36	20.1
Maximum operation, w/reuse	8.5	40	77	7.35	20

See Appendix C

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the large degree of dilution, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The applicant proposes to substitute bromine for chlorine as an anti-fouling agent to control biological growth in the cooling towers. A request for approval of this practice was submitted to Ecology on December 26, 2001, and approved. This request with its accompanying data together with a literature search were used as a basis for approving this substitution. To accomplish the anti-fouling purpose of this addition, sodium bromide is combined with sodium hypochlorite to produce hypobromous acid, the active agent. Note that sodium hypochlorite was the anti-fouling agent previously used alone. In this application, sodium bromide will be added in sufficient quantities to completely substitute for chlorine.

Bromine itself produces much the same sort of toxic substances as would chlorine, but it degrades faster. The permittee will debrominate the effluent to meet Ecology standards. For this permit, the limit for bromine (and possibly chlorine) is set at the limit that would have been calculated for chlorine alone, given the similarity of the compounds produced as a byproduct of their addition. Appendix C shows the derivation of this limit. Total Combined Halogens (TCH) is the term used to describe this toxic limit.

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1996). The determination of the reasonable potential for ammonia, TCH, chromium(+6), chromium(+3), copper, and zinc to exceed the water quality criteria at Outfall 001 was evaluated (see Appendix C) for the worst possible discharge conditions as defined in the mixing zone study. The determination of the reasonable potential for ammonia, TCH, chromium(+6), chromium(+3), copper, and zinc to exceed the water quality criteria at Outfalls 002 and 003 was evaluated (see Appendix C) for without consideration of a mixing zone. The parameters used in the critical condition modeling for Outfall 001are as follows: acute and chronic dilution factors as calculated in the mixing zone study , receiving water temperature 20°C, receiving water hardness 62 (as mg $CaCO_3$/L), and background ammonia 0.1 mg/L, copper 2.0 µg/L, and zinc 2.0 µg/L. Due to the close proximity of the river, the parameters used in the critical condition modeling for Outfalls 002 and 003 were assumed to be the same , but without any dilution factors. All other toxic pollutants were assumed to be zero for background concentration. From this study (see Appendix C) it can bee seen that there is no potential for violation of the Water Quality Standards at the current dilutions for Outfall 001. The wetland mitigation discharges must be monitored for ammonia, copper, chromium and zinc to be certain that standards are met at the time of discharge.

HUMAN HEALTH

The Department has determined that the applicant's discharge does not contain chemicals of concern based on existing data or knowledge.

WHOLE EFFLUENT TOXICITY

Although the Permittee has provided acceptable results from the last permits requirements for whole effluent toxicity, the substitution of bromination for chlorination will require a complete new series of whole effluent toxicity (WET) tests.

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory

tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent and therefore this approach is called WET testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. The proposed permit contains requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. The proposed permit requires the permittee to conduct toxicity testing for one year in order to characterize both the acute and chronic toxicity of the effluent.

If acute or chronic toxicity is measured during effluent characterization at levels that, in accordance with WAC 173-205-050(2)(a), have a reasonable potential to cause receiving water toxicity, then the proposed permit will set a limit on the acute or chronic toxicity. The proposed permit will then require the Permittee to conduct WET testing in order to monitor for compliance with either an acute toxicity limit, a chronic toxicity limit, or both an acute and a chronic toxicity limit. The proposed permit also specifies the procedures the Permittee must use to come back into compliance if the limits are exceeded.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC_{50}, EC_{50}, IC_{25}, etc. The Department recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

When the WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water toxicity, the Permittee will not be given WET limits and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

SUMMARY OF THE PROPOSED TECHNOLOGY-BASED AND WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR EACH DISCHARGE POINT

The proposed effluent limitations for the CPU Power Plant are presented below in Table 6.A.

Table 6A: Effluent Limitations Summary, Outfall 001.

Discharge Point	Parameter	Monthly Average Limit	Daily Maximum Limit	Basis
001	pH	within the range of 6.0 - 9.0 standard units		Technology
	Temperature	N/A	40°C	Water Quality
	polychlorinated biphenyl compounds (PCB's)	no discharge at any time		Technology
	combined halogens, total residual	0.104 mg/L	0.152 mg/L	Water Quality
	ammonia	76 µg/L	111 µg/L	Water Quality
	copper	51 µg/L	74 µg/L	Water Quality
	Chromium, total	200 µg/L	200 µg/L	Technology
	Chromium (+6)	82 µg/L	120 µg/L	Water Quality
	zinc	407 µg/L	594 µg/L	Water Quality
003	pH	within the range of 6.0 - 9.0 standard units	Technology	
	Temperature	N/A	22°C	Water Quality
	polychlorinated biphenyl compounds (PCB's)	no discharge at any time	Technology	
	combined halogens, total residual	0.12 mg/L	0.018 mg/L	Water Quality
	ammonia	2 µg/L	3 µg/L	Water Quality
	copper	8 µg/L	11 µg/L	Water Quality
	chromium, total	10 µg/L	15 µg/L	Water Quality
	zinc	52 µg/L	76 µg/L	Water Quality
Cooling Tower Blowdown	combined halogens, total residual	0.2 mg/L	0.5 mg/L	Technology
	chromium, total	0.2 mg/L	0.200 mg/L	Technology
	zinc, total	1 mg/L	1 mg/L	Technology

Discharge Point	Parameter	Monthly Average Limit	Daily Maximum Limit	Basis
Low Volume Wastes	total suspended solids (TSS)	30 mg/L	100 mg/L	Technology
	Oil and Grease	15 mg/L	20 mg/L	Technology
Outfalls 002 and 004	Flow, mgd	1.833	1.900	Water Quality
	pH, S.U.	6.5 to 8.5		Water Quality
	Total Dissolved Solids, mg/l	473	473	Water Quality
Monitoring Wells GW-1 through GW-6	pH, S.U.	6.5 to 8.5		Ground Water Quality
	Total Dissolved Solids, mg/L	N/A	438	AKART
	Iron, mg/L	N/A	0.3	Ground Water Quality
	Manganese, mg/L	N/A	0.05	Ground Water Quality
	Total Coliform Bacteria, cfu/100ml	N/A	1.0	Ground Water Quality
	Chloride, mg/L	N/A	250	Ground Water Quality
	Fluoride, mg/L	N/A	4.0	Ground Water Quality
	Sulfate, mg/L	N/A	250	Ground Water Quality
	Total Nitrogen, mg/L	N/A	10	Ground Water Quality
	Chromium, mg/L	N/A	0.05	Ground Water Quality
	Copper, mg/L	N/A	1.0	Ground Water Quality
	Zinc, mg/L	N/A	5.0	Ground Water

Discharge Point	Parameter	Monthly Average Limit	Daily Maximum Limit	Basis
	Lead, mg/L	N/A	0.05	Quality Ground Water Quality

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee proposes a discharge of industrial wastewater to ground and therefore limitations are required based on potential effects to ground water.

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring and testing schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

In order to assess compliance with the technology-based effluent limits for the priority pollutants and PCBs of no detectable amount, quarterly monitoring will be required for the first year of the permit. The monitoring frequency can then be reduced if the Department concurs in writing.

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and the effluent limitations are being achieved (WAC 173-216-110). The location of monitoring wells will be determined in the hydrogeological report.

OTHER PERMIT CONDITIONS

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The proposed permit requires the Permittee to develop and implement a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

OUTFALL EVALUATION

Proposed permit condition S7. requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to evaluate the extent of sediment accumulations in the vicinity of the outfall.

OPERATION AND MAINTENANCE MANUAL

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An operation and maintenance manual will be submitted as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). It has been determined that the implementation of the procedures in the operation and maintenance manual is a reasonable measure to ensure compliance with the terms and limitations in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit have a duration not to exceed June 30, 2008, the end of the permit cycle for Basin 5.

REVIEW BY THE PERMITTEE

A proposed permit and fact sheet was reviewed by the Permittee for verification of facts. Only factual items were corrected in the draft permit and fact sheet.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on September 8, 1996, in *The Columbian* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.
The Department will publish a Public Notice of Draft (PNOD) on (date) in *The Columbian* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6285, or by writing to the address listed above.

This permit was written by Gary Anderson, P.E.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bromine--Bromine is used to disinfect wastewater of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewater of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's life span or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Class 1 Inspection--A walk-through inspection of a facility that includes a visual inspection and some examination of facility records. It may also include a review of the facility's record of environmental compliance.

Class 2 Inspection--A walk-through inspection of a facility that includes the elements of a Class 1 Inspection plus sampling and testing of wastewater. It may also include a review of the facility's record of environmental compliance.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Daily Maximum Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

Monthly Average --The average of the measured values obtained over a calendar month's time.

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington state permit writers are joint NPDES/State permits issued under both state and federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Combined Halogens – The sum of the concentrations of chlorine and bromine residuals in the wastewater

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—TECHNICAL CALCULATIONS

APPENDIX C
Water Quality Compliance Calculation
Clalrk County PUD, River Road Generating Station
Outfall 001, Columbia River

Dilution (Dil'n) factor is the inverse of the percent effluent concentration at the edge of the acute or chronic mixing zone.

	Permit Limit Calculation Summary										Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations							Statistical variables for permit limit calculation				
PARAMETER	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translator Acute	Metal Criteria Translator Chronic	Ambient Concentration ug/L	Water Quality Standard Acute ug/L	Water Quality Standard Chronic ug/L	Average Monthly Limit (AML) ug/L	Maximum Daily Limit (MDL) ug/L	Comments	WLA Acute ug/L	WLA Chronic ug/L	LTA Acute ug/L	LTA Chronic ug/L	LTA Coeff. Var. (CV) decimal	LTA Prob'y Basis decimal	Limiting LTA ug/L	Coeff. Var. (CV) decimal	AML Prob'y Basis decimal	MDL Prob'y Basis decimal	# of Samples per Month n	
Total Combined Halogens	8.0	190.00				19.0000	11.0000	104.2	152.0	Outfall 001	152	2090.00	48.8	1102.3	0.60	0.99	48.8	0.60	0.95	0.99	1.00	1.00
Chromium (+6)	8.00	190.00				15.00	10.00	82.3	120.0	Outfall 001	120	1900.00	38.5	1002.1	0.60	0.99	38.5	0.60	0.95	0.99	1.00	1.00
Chromium (+3)	8.00	190.00				371.00	120.00	2034.5	2968.0	Outfall 001	2968	22800.00	953.0	12025.5	0.60	0.99	953.0	0.60	0.95	0.99	1.00	1.00
Copper	8.00	190.00			2.00	11.00	7.50	50.7	74.0	Outfall 001	74	1047.00	23.8	552.2	0.60	0.99	23.8	0.60	0.95	0.99	1.00	1.00
Zinc	8.00	190.00			2.00	76.0000	70.0000	407.2	594.0	Outfall 001	594	12922.00	190.7	6815.5	0.60	0.99	190.7	0.60	0.95	0.99	1.00	1.00
Ammonia	8.00	190.00			0.10	14.00	1.50	76.3	111.3	Outfall 001	111	266.10	35.7	140.4	0.60	0.99	35.7	0.60	0.95	0.99	1.00	1.00
															0.60	0.99		0.60	0.95	0.99	1.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
Total Combined Halogens	1.00	1.00				19.00	11.00	12.4	18.1	Outfalls 002 and 003	19	11.00	6.1	5.8	0.60	0.99	5.8	0.60	0.95	0.99	1.00	1.00
Chromium (+6)	1.00	1.00				15.00	10.00	10.3	15.0	Outfalls 002 and 003	15	10.00	4.8	5.3	0.60	0.99	4.8	0.60	0.95	0.99	1.00	1.00
Chromium (+3)	1.00	1.00				371.00	120.00	135.1	197.1	Outfalls 002 and 003	371	120.00	119.1	63.3	0.60	0.99	63.3	0.60	0.95	0.99	1.00	1.00
Copper	1.00	1.00			2.00	11.00	7.50	7.5	11.0	Outfalls 002 and 003	11	7.50	3.5	4.0	0.60	0.99	3.5	0.60	0.95	0.99	1.00	1.00
Zinc	1.00	1.00			2.00	76.00	70.00	52.1	76.0	Outfalls 002 and 003	76	70.00	24.4	36.9	0.60	0.99	24.4	0.60	0.95	0.99	1.00	1.00
Ammonia	1.00	1.00			0.10	14.00	1.50	1.7	2.5	Outfalls 002 and 003	14	1.50	4.5	0.8	0.60	0.99	0.8	0.60	0.95	0.99	1.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00
															0.60	0.99		0.60	0.95	0.99	4.00	1.00

This spreadsheet calculates water quality based permit limits based on the two value steady state model using the State Water Quality standards contained in WAC 173-201A. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 99. Last revision date 9/98. Written by G. Shervey

APPENDIX C—RIVER ROAD GENERATING PROJECT

Calculation of pH of a mixture of two flows.
Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1.	DILUTION FACTOR AT MIXING ZONE BOUNDARY	190.000
1.	UPSTREAM/BACKGROUND CHARACTERISTICS	
	Temperature (deg C):	20.00
	pH:	7.35
	Alkalinity (mg CaCO3/L):	62.00
2.	EFFLUENT CHARACTERISTICS	
	Temperature (deg C):	40.00
	pH:	7.80
	Alkalinity (mg CaCO3/L):	345.00
OUTPUT		
1.	IONIZATION CONSTANTS	
	Upstream/Background pKa:	6.38
	Effluent pKa:	6.20
2.	IONIZATION FRACTIONS	
	Upstream/Background Ionization Fraction:	0.90
	Effluent Ionization Fraction:	0.97
3.	TOTAL INORGANIC CARBON	
	Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	68.67
	Effluent Total Inorganic Carbon (mg CaCO3/L):	355.66
4.	CONDITIONS AT MIXING ZONE BOUNDARY	
	Temperature (deg C):	20.11
	Alkalinity (mg CaCO3/L):	63.49
	Total Inorganic Carbon (mg CaCO3/L):	70.18
	pKa:	6.38
	pH at Mixing Zone Boundary:	7.36

APPENDIX C—RIVER ROAD GENERATING PROJECT

Calculation of pH of a mixture of two flows.
Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1.	DILUTION FACTOR AT MIXING ZONE BOUNDARY	3853.000
1.	UPSTREAM/BACKGROUND CHARACTERISTICS	
	Temperature (deg C):	20.00
	pH:	7.35
	Alkalinity (mg CaCO3/L):	62.00
2.	EFFLUENT CHARACTERISTICS	
	Temperature (deg C):	40.00
	pH:	8.50
	Alkalinity (mg CaCO3/L):	94.00
OUTPUT		
1.	IONIZATION CONSTANTS	
	Upstream/Background pKa:	6.38
	Effluent pKa:	6.29
2.	IONIZATION FRACTIONS	
	Upstream/Background Ionization Fraction:	0.90
	Effluent Ionization Fraction:	0.99
3.	TOTAL INORGANIC CARBON	
	Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	68.67
	Effluent Total Inorganic Carbon (mg CaCO3/L):	94.58
4.	CONDITIONS AT MIXING ZONE BOUNDARY	
	Temperature (deg C):	20.01
	Alkalinity (mg CaCO3/L):	62.01
	Total Inorganic Carbon (mg CaCO3/L):	68.68
	pKa:	6.38
	pH at Mixing Zone Boundary:	7.35

APPENDIX C—RIVER ROAD GENERATING PROJECT

Calculation of pH of a mixture of two flows.
Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1.	DILUTION FACTOR AT MIXING ZONE BOUNDARY	242.000
1.	UPSTREAM/BACKGROUND CHARACTERISTICS	
	Temperature (deg C):	20.00
	pH:	7.35
	Alkalinity (mg CaCO3/L):	62.00
2.	EFFLUENT CHARACTERISTICS	
	Temperature (deg C):	40.00
	pH:	8.00
	Alkalinity (mg CaCO3/L):	335.00
OUTPUT		
1.	IONIZATION CONSTANTS	
	Upstream/Background pKa:	6.38
	Effluent pKa:	6.29
2.	IONIZATION FRACTIONS	
	Upstream/Background Ionization Fraction:	0.90
	Effluent Ionization Fraction:	0.98
3.	TOTAL INORGANIC CARBON	
	Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	68.67
	Effluent Total Inorganic Carbon (mg CaCO3/L):	341.53
4.	CONDITIONS AT MIXING ZONE BOUNDARY	
	Temperature (deg C):	20.08
	Alkalinity (mg CaCO3/L):	63.13
	Total Inorganic Carbon (mg CaCO3/L):	69.80
	pKa:	6.38
	pH at Mixing Zone Boundary:	7.36

APPENDIX C—RIVER ROAD GENERATING PROJECT

Calculation of pH of a mixture of two flows.
Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1.	DILUTION FACTOR AT MIXING ZONE BOUNDARY	432.000
1.	UPSTREAM/BACKGROUND CHARACTERISTICS	
	Temperature (deg C):	20.00
	pH:	7.35
	Alkalinity (mg CaCO3/L):	62.00
2.	EFFLUENT CHARACTERISTICS	
	Temperature (deg C):	40.00
	pH:	8.50
	Alkalinity (mg CaCO3/L):	77.00
OUTPUT		
1.	IONIZATION CONSTANTS	
	Upstream/Background pKa:	6.38
	Effluent pKa:	6.29
2.	IONIZATION FRACTIONS	
	Upstream/Background Ionization Fraction:	0.90
	Effluent Ionization Fraction:	0.99
3.	TOTAL INORGANIC CARBON	
	Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	68.67
	Effluent Total Inorganic Carbon (mg CaCO3/L):	77.47
4.	CONDITIONS AT MIXING ZONE BOUNDARY	
	Temperature (deg C):	20.05
	Alkalinity (mg CaCO3/L):	62.03
	Total Inorganic Carbon (mg CaCO3/L):	68.69
	pKa:	6.38
	pH at Mixing Zone Boundary:	7.35

APPENDIX C—RIVER ROAD GENERATING PROJECT

Calculation of pH of a mixture of two flows.
Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

Lotus File PHMIX2.WK1 Revised 19-Oct-93

INPUT		
1.	DILUTION FACTOR AT MIXING ZONE BOUNDARY	432.000
1.	UPSTREAM/BACKGROUND CHARACTERISTICS	
	Temperature (deg C):	20.00
	pH:	7.35
	Alkalinity (mg CaCO3/L):	62.00
2.	EFFLUENT CHARACTERISTICS	
	Temperature (deg C):	40.00
	pH:	8.50
	Alkalinity (mg CaCO3/L):	77.00
OUTPUT		
1.	IONIZATION CONSTANTS	
	Upstream/Background pKa:	6.38
	Effluent pKa:	6.33
2.	IONIZATION FRACTIONS	
	Upstream/Background Ionization Fraction:	0.90
	Effluent Ionization Fraction:	0.99
3.	TOTAL INORGANIC CARBON	
	Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	68.67
	Effluent Total Inorganic Carbon (mg CaCO3/L):	77.53
4.	CONDITIONS AT MIXING ZONE BOUNDARY	
	Temperature (deg C):	20.02
	Alkalinity (mg CaCO3/L):	62.03
	Total Inorganic Carbon (mg CaCO3/L):	68.69
	pKa:	6.38
	pH at Mixing Zone Boundary:	7.35

APPENDIX D--126 PRIORITY POLLUTANTS

Volatiles

001 acrolein
002 acrylonitrile
003 benzene
004 bromoform
005 carbon tetrachloride
006 chlorodibromomethane
007 chloroethane
008 2-chloroethylvinyl ether
009 chloroform
010 dichlorobromomethane
011 1,1-dichloroethane
012 1,2-dichloroethane
013 1,1-dichloroethylene
014 1,2-dichloropropane
015 1,3-dichloropropylene
016 ethylbenzene
018 methyl bromide
019 methyl chloride
020 methylene chloride
021 1,1,2,2-tetrachloroethane
022 tetrachloroethylene
023 toluene
024 1,2-trans-dichloroethylene
025 1,1,1-trichloroethane
026 1,1,2-trichloroethane
027 trichloroethylene
028 vinyl chloride

Acid Compounds

029 2-chlorophenol
030 2,4-dichlorophenol
031 2,4-dimethylphenol
032 2-methyl-4,6-dinitrophenol
033 2,4-dinitrophenol
034 2-nitrophenol
035 4-nitrophenol
036 3-methyl-4-chlorophenol
037 pentachlorophenol
038 phenol
039 2,4,6-trichlorophenol

Base/Neutral

040 acenaphthene
041 acenaphthylene
042 anthracene
043 benzidine
044 benzo(a)anthracene
045 benzo(a)pyrene
046 benzo(b)fluoranthene
047 benzo(g,h,i)perylene
048 benzo(k)fluoranthene
049 bis(2-chloroethoxy)methane
050 bis(2-chloroethyl)ether
051 bis(2-chloroisopropyl)ether
052 bis(2-ethylhexyl)phthalate
053 4-bromophenyl phenyl ether
054 butylbenzyl phthalate
055 2-chloronaphthalene
056 4-chlorophenyl phenyl ether
057 chrysene
058 dibenzo(a,h)anthracene
059 1,2-dichlorobenzene
060 1,3-dichlorobenzene
061 1,4-dichlorobenzene
062 3,3´-dichlorobenzidine
063 diethyl phthalate
064 dimethyl phthalate
065 di-n-butyl phthalate
066 2,4-dinitrotoluene
067 2,6-dinitrotoluene
068 di-n-octyl phthalate
069 1,2-diphenylhydrazine
070 fluoranthene
071 fluorene
072 hexachlorobenzene
073 hexachlorobutadiene
074 hexachlorocyclopentadiene
075 hexachloroethane
076 indeno(1,2,3-cd)pyrene
077 isophorone
078 naphthalene
079 nitrobenzene
080 n-nitrosodimethylamine
081 n-nitrosodi-n-propylamine
082 n-nitrosodiphenylamine
083 phenanthrene
084 pyrene
085 1,2,4-trichlorobenzene

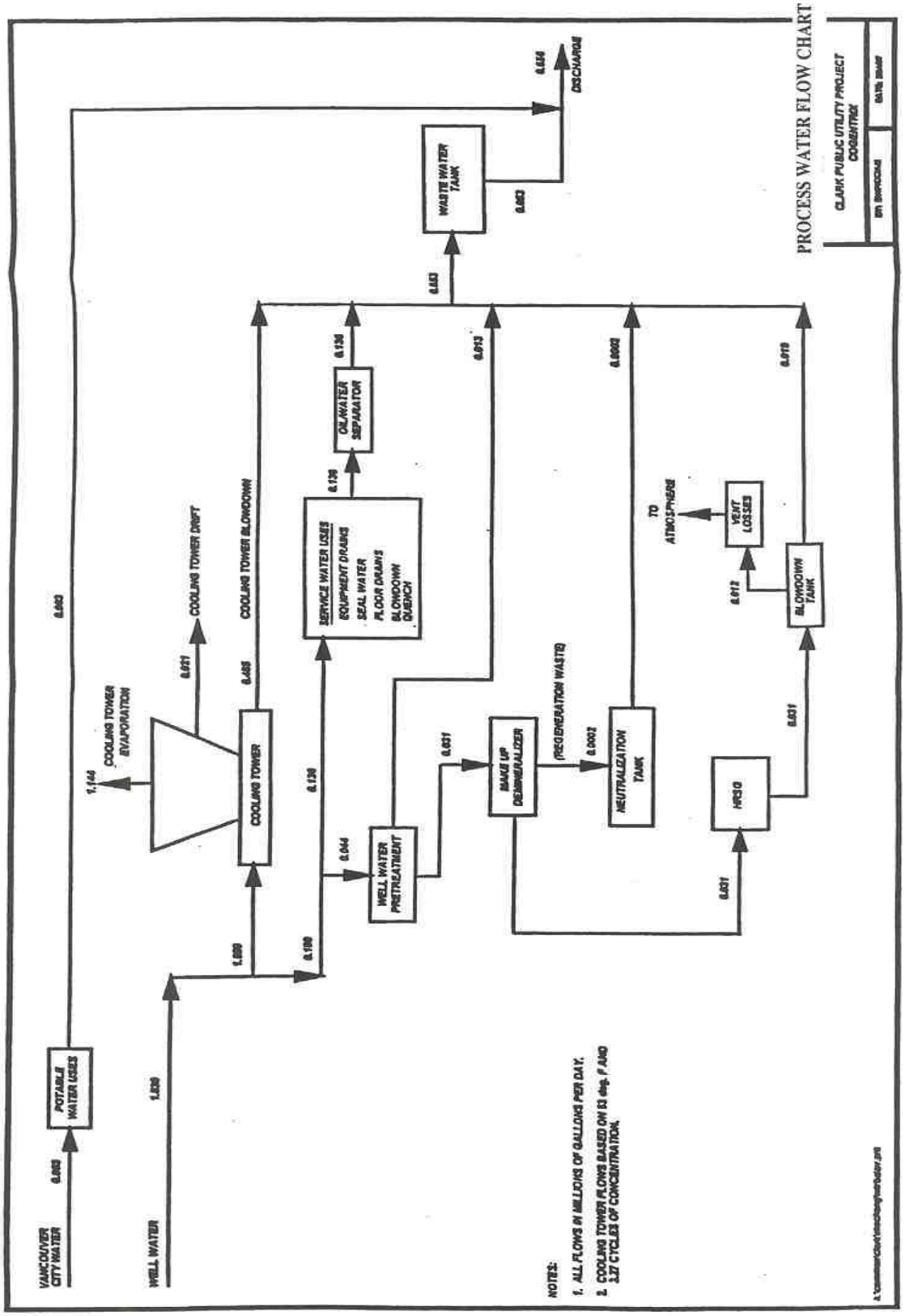
Pesticides

086 aldrin
087 alpha-BHC
088 beta-BHC
089 gamma-BHC
090 delta-BHC
091 chlordane
092 4,4′-DDT
093 4,4′-DDE
094 4,4′-DDD
095 dieldrin
096 alpha-endosulfan
097 beta-endosulfan
098 endosulfan sulfate
099 endrin
100 endrin aldehyde
101 heptachlor
102 heptachlor epoxide
103 PCB-1242 (Arochlor 1242)
104 PCB-1254 (Arochlor 1254)
105 PCB-1221 (Arochlor 1221)
106 PCB-1232 (Arochlor 1232)
107 PCB-1248 (Arochlor 1248)
108 PCB-1260 (Arochlor 1260)
109 PCB-1016 (Arochlor 1016)
110 toxaphene

Other Toxic Pollutants

111 Antimony
112 Arsenic
113 Asbestos
114 Beryllium
115 Cadmium
116 Chromium
117 Copper
118 Cyanide
119 Lead
120 Mercury
121 Nickel
122 Selenium
123 Silver
124 Thallium
125 Zinc
126 2,3,7,8-TCDD (dioxin)

APPENDIX E–PROCESS WATER FLOW CHART



APPENDIX F
RIVER ROAD GENERATING STATION
NPDES PERMIT NO. WA0040932
IRRIGATION AREA
PORT OF VANCOUVER
FRENCHMEN'S BAR PARK

A Parcel of land lying in southwest quarter of Section 1, southeast quarter of Section 2, northeast quarter of Section 11, and the northwest quarter, southwest quarter, and southeast quarter of Section 12, Township 2 North, Range 1 West of the Willamette Meridian in Clark County, Washington, more particularly described as follows:

> Beginning at the west quarter corner of said section 12 which is marked by a 1/2" iron rod set in concrete; thence South 68°15'08" West 929.82 feet to the intersection of the southerly right of way of Lower River Road with the westerly right of way of the J.T. Scott Road and the true point of beginning; thence along the westerly right of way of the Scott Road South 12°16'58" East 102.76 feet to a point; thence leaving said right of way South 65°47'40" West 139.33 feet to a 5/8" iron rod marked with a yellow, plastic cap marked "Clark County Surveyor," hereinafter referred to as a 5/8" rod; thence South 71°04'54" West 254.25 feet to a 5/8" iron rod; thence South 69°20'43" West 1703.23 feet to 5/8"iron rod; thence South 69°03'20" West 473.47 feet to a 5/8" iron rod; thence South 70°17'35" West 652.40 feet to a 5/8" iron rod; thence South 70°15'58" West 78.30 feet to a point on the landward boundary of the tidelands of the Columbia River; thence northerly along the landward boundary of said tidelands to a point that bears North 18°17'50" West 6,519.21 feet from said last point; thence along an existing fence line the following courses: South 80°30'42" East 92.07 feet, South 65°28'34" East 24.34 feet, South 68°24'12" East 206.97 feet, South 68°10'11" East 90.42 feet, South 68°12'09" East 257.91 feet, South 68°19'32" East 344.60 feet, South 68°04'48" East 478.74 feet to the westerly right of way Lower River Road; thence along said westerly right of way South 08°29'15" East 34.43 feet; thence leaving said right of way North 69°05'17" West 17.43 feet to a 5/8" iron rod; thence North 68°11'05" West 1,271.62 feet to a 5/8" iron rod; thence South 60°34'01" West 70.00 feet to a 5/8" iron rod; thence South 17°42'27" West 233.65 feet to a 5/8" iron rod; thence South 05°07'54" West 782.73 feet to a 5/8" iron rod, thence South 21°13'50" East 500.60 feet to a 5/8" iron rod; thence South 24°19'12" East 669.63 feet to a 5/8" iron rod; thence South 65°23'40" West 190.00 feet to a 5/8" iron rod; thence South 24°36'20" East 373.64 feet to a 5/8" iron rod; thence South 24°28'54" East 815.02 feet to a 5/8" iron rod; thence North 53°02'54" East 32.13 feet to a point in a fence line; thence along said fence line South 24°20'48" East 1,110.03 feet to a 5/8" iron rod; thence South 22°25'00" East 192.69 feet to a 5/8" iron rod; thence South 18°01'42" East 460.36 feet to a 5/8" iron rod; thence South 35°31'44" East 199.54 feet to a 5/8" iron rod; thence South 26°21'07" East 315.68 feet to a 5/8" iron rod; thence South 10°42'58" East 157.93 feet to a 5/8" iron rod; thence South 34°16'23" East 328.25 feet to a 5/8" iron rod; thence South 77°13'30" East 98.44 feet to a 5/8" iron rod; thence North 89°02'10" East 102.42 feet to a point on the westerly right of way of Lower River Road; thence along said right of way South 10°09'55" East 102.25 feet and North 69°29'05" East 3,054.13 feet to the point of beginning.

Together with all Tidelands appurtenant to the above-described parcel of land, if any; Together with all accreted land and riparian rights connected with and appurtenant to said property.

As surveyed and monumented by the Clark County Surveyor's Office in 1992 and 1993.

This parcel contains 47.87 acres, more or less. By agreement, for purposes of area calculations the boundary between tidelands and uplands was located photogrametrically using an elevation of 16.0 feet on the National Geodetic Vertical Datum of 1929 (1947 adjustment) (15.6 feet on the City of Vancouver Datum, 14.7 feet on the Columbia River Datum at river mile 99).

APPENDIX F
RIVER ROAD GENERATING STATION
NPDES PERMIT NO. WA0040932
IRRIGATION AREA
PORT OF VANCOUVER
VANCOUVER LAKE PARK

PARCEL 1

A portion of Section 6, Township 2 North, Range 1 East, Willamette Meridian, and Section 31, Township 7 North, Range 1 East, Willamette Meridian, lying within the S. Mathews and Wm. S. Ratten Donation Land Claims, described as follows:

Beginning at a point 27.4 chains South 67° West from the Southeast corner of the William Dillon DLC, said corner being the quarter corner on the meridian line on the east boundary line of Section 12. Township 2 North, Range 1 West of the Williamette Meridian; thence North 1° 20' East 30.5 chains to a slough known as the Mathews (Beckmire) Slough; thence Northerly with the meanders of said slough to the south line of the S. Mathews DLC; thence continuing Northerly with the meanders of said slough 34.0 chains to the true point of beginnings; thence South 83° 24' 38" East 611.51 feet more or less to the Government Meander Line of Vancouver Lake as described in the Patent of the Samuel Mathews Donation Land Claim; thence southerly with the DLC meander line South 27° 35' 22" West 831.11 feet, South 43° 35' 22" West 831.11 feet, South 43° 05' 22" West 350.36 feet, South 2° 46' 07" East 529.09 feet, South 44° 50' 47" West 407.41 feet, South 30° 21' 02" West 1728.80 feet, and South 20° 24" 50" West 398.52 feet more or less to a point on the DLC meander line which is the intersection of the meander line and a prolongation of the centerline of the Clark County Diking District No. 14 dike easement as recorded under Clark County Auditor's File No. G-474604 (as said easement crosses Mathews-Beckmire Slough); thence North 47° 57' 22" West 1048.09 feet, more or less along the centerline of said dike easement and the prolongation thereof to the centerline of Mathews-Beckmire Slough; and thence Northerly with the meanders of said slough to the point of beginning.

Containing approximately 65.6 acres.

The above-described tract includes all of the land Easterly of Mathews (Beckmire) Slough and Northerly of the centerline of the above-described dike easement and a prolongation of that centerline to the meander line of Vancouver Lake, as located within that tract of land conveyed to the Aluminum Company of America by deed dated January 17, 1945 and recorded in Book 373, Page 114, deed records of Clark County.

Subject to an easement granted to Clark County for the benefit of Diking Improvement District No. 14 and dated January 16, 1967 and recorded under Auditor's File No. C-474604, deed records of Clark County.

PARCEL 2

A portion of Sections 7 and 18, Township 2 North, Range 1 East of the Willamette Meridian, lying with the Wm. Hendrickson Donation Land Claim, described as follows:

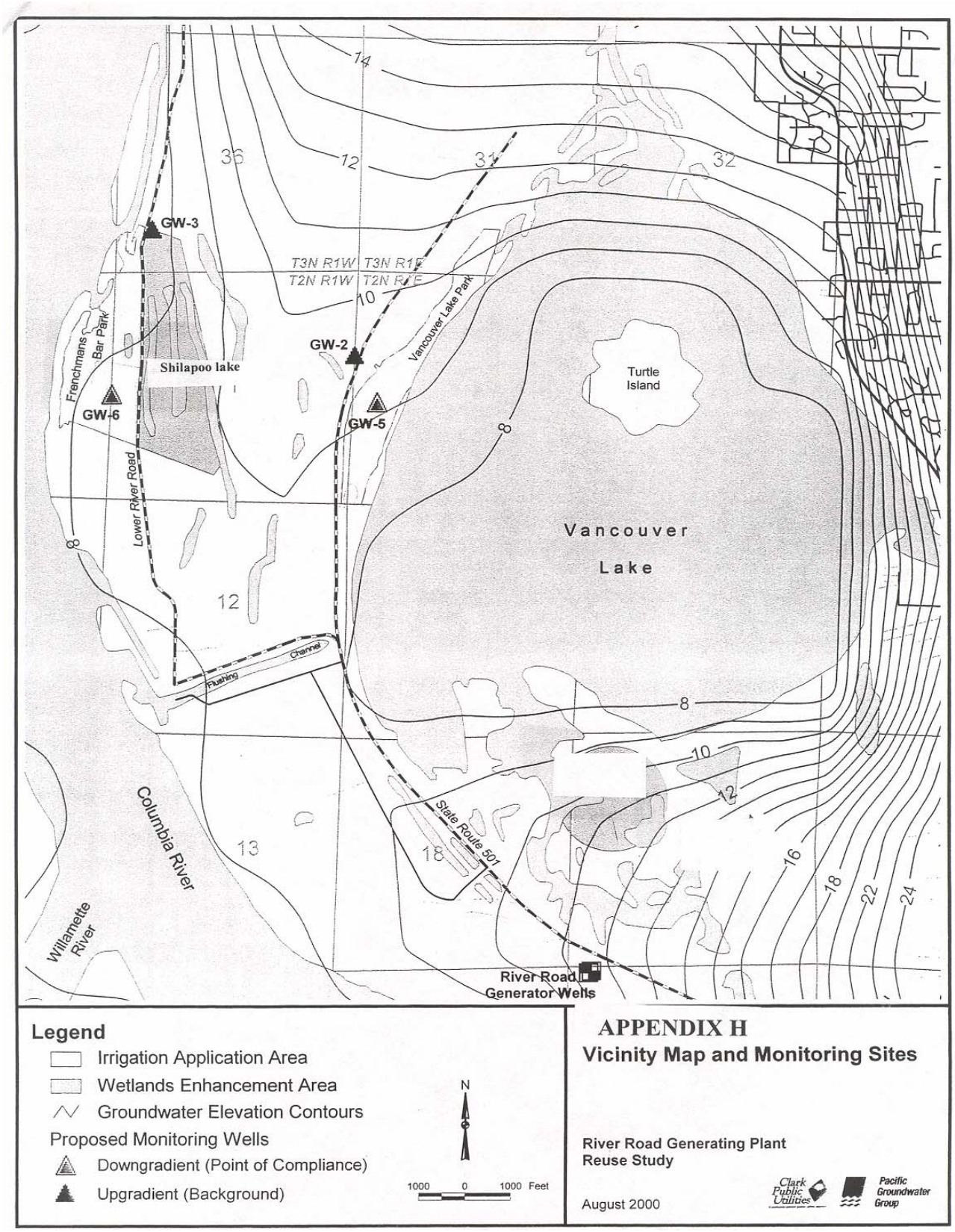
Beginning at the quarter corner between Section 13, Township 2 North, Range 1 West, and Section 18, Township 2 North, Range 1 East; thence North 2° 06' 47" East along the Willamette Meridian 599.11 feet; thence South 86° 24' 38" East 2637.35 feet to the Easterly right-of-way line of Washington State Highway 501, the true point of beginning:

APPENDIX G--LOCATION OF MONITORING WELLS

Thence North 69° 18’ 41” East 889.65 feet more or less to the Meander Line of Vancouver Lake as determined by the Department of Natural Resources and as shown on their plat dated January 1998 and recorded in the Clark County Auditor’s Records; thence along said meander line North 16° 20’ 33” West 292.49 feet, North 68° 52’ 02” East 406.53 feet, South 75° 37’ 36” East 618.30 feet, North 69° 23’ 30” East 118.30 feet, North 26° 08’ 04” West 733.28 feet, North 81° 39’ 57” West 989.61 feet, North 33° 48’ 52” West 132.11 feet, North 6° 07’ 42” West 395.67 feet, North 88° 37’ 54” West 247.54 feet, to the intersection of said meander line with the Government Meander Line as described in the Patent of the William Hendrickson Donation Land Claim; thence along said DLC meander line South 12° 44’ 56” East 151.37 feet, South 4° 23’ 10” East 771.48 feet, South 20° 13’ 04” West 368.48 feet, North 81° 20’ 16” West 368.30 feet, North 54° 08’ 55” West 130.00 feet to the present shoreline of Vancouver Lake; thence along said shoreline North 35° 51’ 05” East 240.00 feet, North 70° 27’ 05” West 341.89 feet, and North 51° 02’ 16” West 407.49 feet to the meander line of the William Hendrickson DLC; thence along said meander line North 33° 53’ 52” West 821.18 feet, North 45° 48’ 17” West 297.28 feet, North 34° 27’ 31” West 923.80 feet, and North 12° 27’ 06” West 585.32 feet more or less to the intersection of said meander line with a prolongation of the Bolen (Balm) Line as referred to in Volume H, Page 346, deed records of Clark County; thence South 67° 35’ 22” West along said Bolen Line 242.35 feet more or less, to its intersection with the Easterly right-of-way line of Washington State Highway 501, thence Southerly along said Easterly right-of-way line to the true point of beginning.

Containing approximately 57.2 acres.

APPENDIX H--VICINITY MAP AND MONITORING SITES



APPENDIX I--RESPONSE TO COMMENTS

Comment 1: Permit, page 1. The correct name of the permittee is Clark Public Utilities

Response: Corrected

Comment 2: Permit, page 1. The complete address of the facility is River Road Generation Plant, 5201 Lower River Road, Vancouver, WA 98660

Response: Corrected

Comment 3: Permit, page 5 of 35, Section 11, should read:

S11. Groundwater Sampling 1/permit cycle January 1, 2004

Response: Comment not understood. The proposed correction differs only from the permit text in that the proposed correction is italicized and underlined.

Comment 4: Page 9 of 15, Effluent Limitations Table. The units for the items listed should be consistent and in agreement with other sections of the permit.

Response: Done.

Comment 5: Effluent Limitations, Land Applications, Outfalls #002 and #004. The original recommendation was for a range of TDSs from 350 mg/L to 650 mg/L. The permit calls for an average and a maximum of 473 mg/L. The average of 350 mg/L and 650 mg/L is 473 mg/L. The maximum limit should accordingly be 650 mg/L.

Response: Agreed.

Comment 6: Page 11. The blending requirement in the draft permit of 2% is too restrictive given that the background data in the monitoring report show a 10% variability.

Response: Page 5-6 of the Updated Engineering Report concerning this project, paragraph 5.12, proposes this 2% variability. This was accepted and included in the permit. Ecology has reviewed the data and will increase the variability factor to 5%.

Comment 7: Page 14 of 35, Monitoring Schedule, Discharge to Ground: The parameter and Units columns have been interchanged for the last five items on the page and the four items carried over to page 15 of 35.

Response: Corrected.

Comment 8: On the cover sheet, the correct name for the facility is Clark Public Utilities' River Road Generating Plant.

Response: Agreed

Comment 9: Page 1, General Information. The Facility Name and Address should be:

River Road Generating Plant
5201 NW Lover River Road
Vancouver, Washington 98660

Response: Agreed.

Comment 10: Page 2, Description of the Facility, History of the Facility. The type of facility should be stated as a *Combined Cycle Combustion Turbine (CCCT).* Also the RRGP Plant is operated by *General Electric Contractual Services*.

Response: Agreed.

Comment11: Page 3, Discharge Outfalls, Outfall 002, Vancouver Lake Park. The park is referred to as owned by Clark County. The park is actually owned by *Vancouver-Clark Parks*.

Response: Agreed.

Comment 12: Page 3, Discharge Outfalls, Outfall 004, Frenchman's Bar Park. Similar to the above comment, the park is actually owned by *Vancouver-Clark Parks*.

Response: Agreed.